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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/295,913	04/21/1999	HOWARD B. SOSIN	2001611-0008	7739

7590

02/10/2005

ELIZABETH E NUGENT CHOATE HALL & STEWART
EXCHANGE PLACE
53 STATE STREET
BOSTON, MA 021092891

EXAMINER

STEVENS, THOMAS H

ART UNIT

PAPER NUMBER

2123

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/295,913

Applicant(s)

SOSIN, HOWARD B.

Examiner

Thomas H. Stevens

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/26/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 25-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Claims 1-45 were examined previously.
2. Claims 25-45 were cancelled by applicant.
3. Claims 1-24 were examined in this office action.

Response to Applicant's Arguments

4. Examiner finds applicant's arguments persuasive, thus is withdrawing current rejection in place of new rejection by St. Ville (U.S. Patent 5,594,651) in view of Yamawaki (U.S. 5,482,280 (1996)) and in further view (Sabatino et al., (5,688,183 (1997))).

New Rejections

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Although the specification motions lean angles (pg. 9, lines 24-

29) in relation to effective loft and adjusted loft, there's no clear definition of what a lean angle is.

Claim Rejections - 35 USC § 103

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-20, 21-24 are rejected under 35 U.S.C. 103 (a) as unpatentable by MacDougal (U.S. 4,261,566 (1981)), in view of (Sabatino et al., (5,688,183 (1997))). MacDougal teaches a method of designing golf clubs doesn't teach how to model a set of clubs based on an individual's swing speed. Sabatino et al. teaches a velocity monitoring system for golf clubs. At the time of invention, it would have been obvious to one of ordinary skill in the art to modify Sabatino et al. by MacDougal so as to properly

fit a set of clubs relative to the individual's swing characteristics for optimum ball distance and performance.

Claim 1. A method of designing a customized golf club (MacDougal: abstract with column 2, lines 11-13) comprising: determining a tempo function relating tempo to club length for a particular golfer (Sabatino: abstract); determining a perceived force function (MacDougal: column 2, lines 48-54) relating perceived force to club length and club head mass for the golfer (MacDougal: column 9, lines 48-63); selecting two design parameters from the group consisting of target distance for the club (Sabatino: column 6, lines 44-50); club length and shaft flexibility for the club (MacDougal: column 4, lines 23-26 and column 3, lines 29-35); and preferred trajectory for a golf ball (Examiner states that shaft variation is directly related to ball flight since the faster the swing speed the stiffer the shaft thus producing a specific ball flight: MacDougal: column 3, 41-49); and using the selected design parameters, together with the determined tempo (MacDougal: column 2, lines 48-54) and perceived force functions, (MacDougal: column 2, lines 48-54) to calculate optimum values for the unselected design parameter and the club head mass for the customized golf club.

Claim 2. The method of claim 1 (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50), wherein tempo is measured by speed of the golfer's hands at impact (Sabatino: column 6, lines 44-48).

Claim 3. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) wherein perceived force is measured by centripetal force (MacDougal: column 2, lines 35-56) applied along the shaft at impact.

Claim 4. The method of claim 3, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) further comprising measuring an effective arm length of the order (MacDougal: column 2, lines 11-17) in order to determine the centripetal force.

Claim 5. A method of designing a customized golf club (MacDougal: abstract with column 2, lines 11-13), comprising: determining a tempo function relating tempo to club length for a particular golfer (Sabatino: abstract); determining a perceived force function (MacDougal: column 2, lines 48-54) relating perceived force to club length and club head mass for the golfer (MacDougal: column 9, lines 48-63) wherein perceived force is measured by centripetal force (MacDougal: column 2, lines 35-56) applied along the shaft at impact; selecting two design parameters from the group consisting of target distance for the club (MacDougal: column 2, lines 11-17); club length and shaft flexibility for the club; and preferred trajectory for a golf ball (Examiner states that shaft variation is directly related to ball flight since the faster the swing speed the stiffer the shaft thus producing a specific ball

flight: MacDougal: column 3, 41-49); and using the selected design parameters, together with the determined tempo (MacDougal: column 2, lines 48-54) and perceived force functions (MacDougal: column 2, lines 48-54), to calculate optimum values for the unselected design parameter and the club head mass for the customized golf club (MacDougal: column 2, lines 11-54); and measuring an effective arm length of the golfer in order to determine the centripetal force, wherein the effective arm length is selected from the group (MacDougal: column 2, lines 11-54) consisting of arm lengths distance from hands to sternum in address position and distance from hands to collarbone in address position.

Claim 6. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) wherein trajectory is controlled by varying club head loft (MacDougal: column 10, lines 25-32).

Claim 7. The method of claim 6, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) wherein the club head loft is the design loft (MacDougal: column 10, lines 25-32).

Claim 8. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) wherein the club head loft is the effective loft (MacDougal: column 10, lines 25-32).

Claim 9. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) further comprising optimizing the lean angle of the clubs (Not addressed, no clear definition within specification).

Claim 10. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) wherein the tempo is impendent of club length (MacDougal: column 9, lines 45-55).

Claim 11. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) wherein the tempo is a linear function of club length or of club length plus arm length (MacDougal: column 9, lines 45-55).

Claim 12. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) wherein the tempo is a power-law function of club length or of club length plus arm length (MacDougal: column 9, lines 45-55).

Claim 13. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) wherein the perceived force is independent of club length (MacDougal: column 9, lines 45-55).

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Claim 14. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) wherein the perceived force is a linear function of club length or club length plus arm length.

Claim 15. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) wherein the perceived force is a power-law function of club length or of club length plus arm length (MacDougal: column 9, lines 45-55).

Claim 16. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) wherein the perceived force is independent of club length and the tempo is proportional to the square root of club length plus arm length (MacDougal: column 9, lines 45-55).

Claim 17 The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) further comprising designing a second golf club having at least one different (MacDougal: column 2, lines 11-20; column 9, lines 48-52) design parameter from the first club, wherein the same tempo (MacDougal: column 9, lines 45-55) function and perceived force function apply to both clubs.

Claim 18. The method of claim 17, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50; MacDougal: column 2, lines 11-20; column 9, lines 48-52; MacDougal: column 9, lines 45-55) wherein the two golf clubs have a reduced difference in perceived length.

Claim 19. A method of designing a customized golf club, (MacDougal: abstract with column 2, lines 11-13) comprising: determining a tempo function relating tempo to club length for a particular golfer (Sabatino: abstract); determining a perceived force function (MacDougal: column 2, lines 48-54) relating perceived force to club length and club head mass for the golfer (MacDougal: column 9, lines 48-63); selecting two design parameters from the group consisting of target distance for the club (MacDougal: column 2, lines 11-17); club length and shaft flexibility for the club (MacDougal: column 4, lines 6-26); and preferred trajectory for a golf ball (Examiner states that shaft variation is directly related to ball flight since the faster the swing speed the stiffer the shaft thus producing a specific ball flight: MacDougal: column 3, 41-49); and using the selected design parameters, together with the determined tempo (MacDougal: column 2, lines 48-54) and perceived force functions (MacDougal: column 2, lines 48-54), to calculate optimum values for the unselected design parameter and the club head mass for the customized golf club (MacDougal: column 2, lines 11-14); and design a second golf club having at least one different design parameter-from the first club (MacDougal: column 2, lines 11-30), wherein the same tempo function and perceived force function apply to both clubs wherein the two golf clubs have a reduced difference in perceived length

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(MacDougal: column 2, lines 11-30) and wherein the perceived length is measured by determining the radius of gyration of a club about a selected center point.

Claim 20 The method of claim 19, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54, column 4, lines 6-26, Sabatino: abstract); wherein the center point is selected by having the golfer swing a test club (Sabatino: column 6, lines 44-48) to determine its perceived length; having the golfer swing a comparison club one or more times while adding weight (MacDougal: column 10, lines 64-67) to the comparison club at a selected point along the shaft until the golfer is unable to distinguish the perceived lengths of the test club and the comparison club (MacDougal: column 9, lines 45-55); and determining the center point around which the test club (Sabatino: column 7, lines 1-5) and the weighted comparison club have identical radii of gyration.

Claim 21. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) comprising designing up to thirteen golf clubs all having the same tempo and perceived force functions and reduced differences in perceived lengths (inherent to the nature of the golf swing since not every swing is perfect; even Tiger Woods nor Tom Watson can't do it).

Claim 23. A method of determining a perceived center of gyration for a golfer (Sabatino: column 7, lines 1-5), comprising having the golfer swing a test club to

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determine its perceived length (MacDougal: column 9, lines 19-42 with figure 6); having the golfer swing a comparison club one or more times while adding weight (MacDougal: column 10, lines 64-67) to the comparison club at a selected point along the shaft until the golfer's unable to distinguish the perceived lengths of the test club and the comparison club (MacDougal: column 9, lines 19-42 with figure 6); and determining the center point (Sabatino: column 7, lines 1-5) around which the test club and the weighted comparison club have identical radii of gyration.

Claim 24. A method of constructing a matched set of golf clubs for a golfer (MacDougal: abstract with column 2, lines 11-13), comprising determining perceived center of gyration according to the method of claims 23 Sabatino: column 7, lines 1-5; MacDougal: column 10, lines 64-67; MacDougal: column 9, lines 19-42 with figure 6) and constructing a plurality of clubs having reduced variation in radius of gyration with respect to the determined center point (Sabatino: column 7, lines 1-10).

10. Claims 1-20, 21-24 are rejected under 35 U.S.C. 103 (a) as unpatentable by MacDougal (U.S. 4,261,566 (1981)), in view of (Sabatino et al., (5,688,183 (1997)) and in further view of Nesbit et al. (U.S. Patent 5,877,970 (1999)). MacDougal teaches a method of designing golf clubs doesn't teach how to model a set of clubs dependent on the individual's swing speed on a computer. Sabatino et al. teaches a velocity monitoring system for golf clubs while Nesbit collects the data on computer.

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify Sabatino et al. with MacDougal and Nesbit et al., since club design covers an infinite amount of swing factors per person; any organization would benefit to monitor and record either an individual's swing techniques for future club improvement.

Claim 22. The method of claim 1, (MacDougal: abstract with column 2, lines 11-13, column 2, lines 48-54; Sabatino: abstract, column 6, lines 44-50) further comprising constructing the designed club using a CAD/CAM system (Nesbit: column 17, lines 25-41).

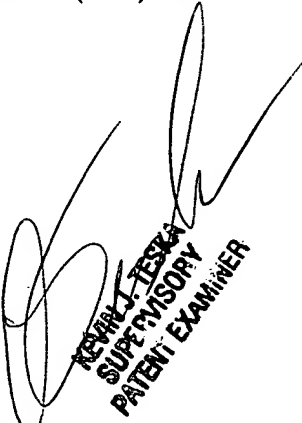
Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm) or contact Supervisor Mr. Kevin Teska at (571) 272-3716. Fax number is 571-273-3715

Any inquires of general nature or relating to the status of this application should be directed to the Group receptionist whose phone number is (571) 272-1400

February 3, 2005

THS


KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER